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ABSTRACT

The purpose of this study was to explore the influence of the security of mother-infant attachment and of infants' cognitive development on mothers' and infants' ability to coordinate their attention to objects with the attention of another person. Fifty-eight 15- to 19-month-olds were videotaped for 10 minutes while they played with toys near their mothers. Infants were then assessed by the Bayley MDI. Mothers completed a Q-sort assessment of security. Observers coded subjects' direction of attention. Security of attachment was correlated only with embedded attention, that is, looks to toys embedded between looks to mother. Bayley MDI scores were correlated with simple joint attention, embedded attention to mother, infant-aware joint attention, and mother-initiated joint attention. Findings suggest a directional relationship between joint attention and cognitive development. It is suggested that the coordination of mother-infant attention is predicted by the infant's developing cognitive competence more strongly than by age or the quality of mother-infant attachment. Patterns of mother-infant interaction that include coordinated attention to objects may support the infant's exploration of objects. A table of related material is appended. (GLR)

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MOTHER-TODDLER COORDINATED ATTENTION IN RELATION TO SECURITY OF ATTACHMENT & COGNITIVE SKILL[1]

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ABSTRACT. The ability to coordinate attention to objects with another person is likely to be affected by both security of attachment & developing cognitive skills. 58 15- to 19-month-olds were videotaped for 10 min. playing with toys near their mothers & then assessed by the Bayley MDI while mothers completed a Q-sort assessment of security. Observers coded direction of attention. Security was correlated only with embedded attention to toys (looks to toys between looks to mother). Bayley MDI scores were correlated with simple joint attention, embedded attention to mother, infant aware joint attention, and mother initiated joint attention. A bi-directional relationship between cognitive development & joint attention is suggested.

INTRODUCTION

One of the social skills that emerges in the beginning of the second year of life is the ability to coordinate attention with another person. For example, a toddler can begin to share an object with another person as a focus of joint attention. In particular, the manner in which a mother and infant organize their attention to objects and to one another may be an important indication of the infant's social competence at this age.

This aspect of social competence is likely to be affected by both social and cognitive factors. Previous studies have reported a link between security of attachment and the coordination of social play with objects. The cognitive demands of coordinating one's attention to both an object and another person suggest that the infant's developing cognitive skills may also support the emergence of coordinated attention.

The purpose of this study was to explore the influence of the security of mother-infant attachment and of cognitive development on coordinated attention.

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[1] Copies of the full length manuscript are available from the first author at the Department of Family & Human Development, Utah State University, Logan, UT 84322-2905.

[2] Part of this study was conducted at the University of Arkansas.

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METHOD

SUBJECTS: 58 toddlers, aged 15 to 19 months (mean = 17.35 mo.), with their mothers, all from intact families of middle socioeconomic status.

PROCEDURE:

Play observation. Subjects were videotaped for 10 minutes playing with 3 nesting cups while seated in a high chair with their mothers seated nearby.

Cognitive assessment. Following the play session, age-appropriate items from the Bayley MDI were administered by one of three testers trained to a reliability criterion of intraclass r .95 and agreement criterion of Kappa .85.

Attachment security assessment. A week before the lab visit, mothers received a copy of the 90 Q-sort items and rated the similarity of each item to their child's behavior. During the lab visit, mothers completed a Q-sort assessment of security of attachment. After the lab visit, an independent observer viewed the videotapes and completed a Q-sort assessment on 20% of the subjects, Pearson's r = .82, intraclass r = .71.

Attention behavior coding. Observers viewed the videotapes and coded, directly to a computer file, infant and mother attention to toys and each other. Interrater reliability was estimated by intraclass correlations of .84 for baby looking and .88 for mother looking (43% of subjects).

OBSERVATIONAL MEASURES: From the computer file, organization and overlap of mother and infant attention was used to define several duration measures of joint attention:

embedded attention to mother: attention to mother "sandwiched" between looks to toys,

embedded attention to toys: attention to toys "sandwiched" between looks to mother,

simple joint attention: overlap of mother and infant attention to the same toy,

infant aware joint attention: joint attention sequenced with infant attention to mother,

infant initiated joint attention: joint attention in which infant looks at toy after mother does,

mother initiated joint attention: joint attention in which mother looks at toy after infant does,

RESULTS

Cognitive scores were significantly related to several measures of attention (Table 1). When infants' MDI scores were higher, mothers and infants spent more total time in simple joint attention and spent more time looking at each other. Higher MDI scores were also positively correlated with embedded attention

to mother, infant aware joint attention, and mother initiated joint attention. Although subjects spanned a 4-month age range, age was not correlated with any of these measures.

Although security of attachment was expected to be related to several measures, it was significantly correlated with only one of the measures of coordinated attention: embedded attention to toys.

DISCUSSION

These findings suggest that the coordination of mother-infant attention is predicted by the infant's developing cognitive competence more strongly than by age or the quality of mother-infant attachment. Cognitive development may support the emergence of joint attention in at least two ways.

First, increased understanding of means-end relations may allow infants to understand the direction of their mothers' attention in relation to their own attention and to use that understanding in their exploration of objects. Second, infants' use of emerging cognitive skills in their play with objects may elicit more attention from their mothers, as suggested by the much stronger relationship of infant cognitive skill with mother-initiated than with infant-initiated joint attention.

It is also likely that the relationship between joint attention and cognitive development is bidirectional. Patterns of mother-infant interaction that include coordinated attention to objects may support the infant's exploration of objects. Thus joint attention may function as a form of scaffolding which not only motivates infants but also supports their developing cognitive skills.

Table 1. Correlations of Q-Sort security of attachment and Bayley MDI cognitive skill scores with measures of mother and infant attention.

	Security	MDI
INFANT ATTENTION		
attention to mother	-.15	.32**
embedded attention to mom	.04	.34**
embedded attention to toys	.35**	-.04
MOTHER ATTENTION		
attention to infant	-.01	.31*
JOINT ATTENTION		
simple joint attention	-.04	.28*
infant aware joint attention	-.03	.29*
mother initiated joint attention	-.01	.30*
infant initiated joint attention	-.06	.15

* $p < .05$

** $p < .01$